UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,011	02/12/2002	Jun Kamatani	00684.003319.	6667

5514 7590 11/10/2004

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER	
YAMNITZKY, MARIE ROSE	

ART UNIT	PAPER NUMBER
1774	

DATE MAILED: 11/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/073,011	KAMATANI ET AL.	
	Examiner	Art Unit	
	Marie R. Yamnitzky	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper ~~No(s)/Mail Date~~ *rec'd 24 Sep 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 24, 2004 has been entered.

2. Applicant's amendment filed September 24, 2004 cancels claims 1-7 and 9-16, and adds claims 17-19.

Claims 17-19 are pending.

3. All rejections set forth in the Office action mailed April 21, 2004 are moot since all the rejected claims have been cancelled.

The previously applied published application of Grushin et al. (US 2002/0121638 A1) does not disclose or suggest the presently claimed device and picture display apparatus. Grushin's iridium compounds must have at least one fluorine or fluorinated substituent whereas none of compounds (1)-(49) set forth in present claim 17 have a fluorine or fluorinated substituent.

4. Claims 17-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant

art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specific compounds represented by formulae (28), (38) and (45)-(49) are not disclosed in.the application as originally filed.

Based on applicant's remarks accompanying the amendment, the compound of formula (28) is supported by compound 599. The variables defined for compound 599 in Table 1-10 include A, B and "B' or B"", but no A'. Therefore, compound 599 is apparently a compound having partial structures represented by formulae (2) and (4) as shown on page 11 of the specification rather than partial structures represented by formulae (2) and (3). The examiner does not find a compound having the structure of formula (28) defined in any of Tables 1-1 through 1-15.

With respect to the compounds represented by formulae (38) and (45)-(49), these compounds are isomers of compounds disclosed in the specification. Based on the structures Pe, Cz, P1 and P6 on pages 24-25 of the specification, the bond positions between cyclic group A and cyclic group B, and between cyclic group A and iridium, are different in the compounds represented by present formulae (38) and (45)-(49) than in the originally disclosed compounds.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al. (US 2001/0019782 A1).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Igarashi discloses iridium compounds for use as a light emitting material in an organic luminescence device (e.g. see paragraphs [0002]-[0004]).

Igarashi does not explicitly disclose any of the compounds represented by formulae (1)-(49) as set forth in present claim 17, but Igarashi discloses iridium compounds similar to some of these compounds. It is the examiner's position that compounds represented by present formulae (1)-(8), (10), (12)-(28), (30)-(32) and (35)-(38) are suggested by Igarashi's disclosure, and an organic luminescence device comprising at least one of these compounds would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention.

Igarashi discloses compounds having three phenylpyridine ligands in which the phenyl ring or the pyridine ring is substituted with an alkyl or alkoxy group. For example, see Igarashi's compounds of formulae (1-4), (1-5), (1-6) and (1-44).

Also see formula (13) on page 8 and see paragraphs [0050], [0073], [0074] and [0076]. Formula (13) on page 8 encompasses compounds having at least one phenylpyridine ligand wherein the phenyl ring and/or the pyridine ring may be substituted with up to four substituents each. In addition to the at least one phenylpyridine ligand, compounds of Igarashi's general formula (13) may have a diketone ligand such as an acetylacetonate ligand.

The compounds of present formulae (1) and (2) are position isomers of Igarashi's compound of formula (1-5), differing in the position of the alkyl substituent on the phenyl ring.

The compounds of present formulae (3), (4) and (6) differ from Igarashi's compounds of formulae (1-5) and (1-44) in the size and position of the alkyl substituent on the phenyl ring. The compounds of present formulae (5) and (7) differ from Igarashi's compounds of formulae (1-5) and (1-44) in the size of the alkyl substituent on the phenyl ring.

The compound of present formula (8) differs from Igarashi's compound of formula (1-6) in the size of the alkoxy substituent on the phenyl ring.

The compounds of present formulae (10) and (12) are diphenylamino substituted derivatives of Igarashi's compound of formula (1-1). Igarashi discloses a diphenylamino group as a suitable substituent for the iridium compounds (see paragraph [0050]).

The compounds of present formulae (13), (14) and (15) are position isomers of Igarashi's compound of formula (1-4), differing in the position of the methyl group on the pyridine ring.

The compound of present formula (16) differs from Igarashi's compound of formula (1-4) in the size and position of the alkyl substituent on the pyridine ring.

The compounds of present formulae (17)-(20) differ from Igarashi's compounds of formulae (1-4), (1-5) and (1-44) in that the present compounds have an alkyl substituent on each of the phenyl and pyridine rings, the position of the alkyl substituent on the phenyl ring differs in the case of (17), the size of the alkyl substituent on the phenyl ring differs in the case of (20), and the position of the alkyl substituent on the pyridine ring differs in the case of (17)-(20).

The compounds of present formulae (21)-(27) are alkyl substituted derivatives of Igarashi's compound of formula (1-22), compounds (21), (22) and (24) having an alkyl substituent on the phenyl ring, compounds (25)-(27) having an alkyl substituent on the pyridine ring, and compounds (23), (24) and (26) having an additional alkyl group on the diketone ligand. A diketone ligand of the structure required by (23), (24) and (26) is suggested by the diketone ligand depicted on page 20 of the reference.

The compound of present formula (28) is within the scope of Igarashi's compound of general formula (13) in which the L ligand may also be a phenylpyridine ligand, and the phenylpyridine ligands are not identically substituted.

The compound of present formula (35) is an alkyl substituted derivative of Igarashi's compound of formula (1-46). A diketone ligand of the structure required by (35) is suggested by the diketone ligand depicted on page 20 of the reference.

The compound of present formula (38) is an alkyl substituted derivative of Igarashi's compound of formula (1-14).

With respect to the compounds of present formulae (30)-(32), (36) and (37), compounds having at least one phenylquinoline ligand or at least one naphthylpyridine ligand are also suggested by Igarashi. For example, see paragraphs [0043] and [0107], and formula (21) on page 5.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to make compounds suggested by Igarashi and similar to the specific compounds disclosed by Igarashi with the expectation that compounds similar in structure would have

similar properties and could be used for the same purpose. One of ordinary skill in the art at the time of the invention would have reasonably expected, for example, that compounds similar to Igarashi's compound of formula (1-4) or (1-5) having an alkyl substituent other than a methyl group and/or having an alkyl substituent at a different position on the phenyl and/or pyridine ring, would have properties similar to the properties of the compound of formula (1-4) or (1-5), and could be used for the same purpose. One of ordinary skill in the art would have reasonably expected such similar compounds to be usable for Igarashi's purposes given Igarashi's general formula (13), which suggests that various positions on the phenyl and/or pyridine ring may be substituted, and given Igarashi's teachings regarding alkyl substituents in paragraph [0050]. One of ordinary skill in the art also would have reasonably expected that other compounds having ligands suggested by Igarashi would be suitable for Igarashi's purposes.

Igarashi does not specifically limit the concentration of the iridium compound in the luminescence layer of the device, but Igarashi's examples demonstrate that Igarashi's iridium compounds may be used at concentrations of at least 8 wt% (e.g. the concentration of the iridium compound in the devices of Examples 15, 19 and 20 is 10 wt%; the concentration of the iridium compound in the device of Example 16 is 100 wt%). It would have been within the level of ordinary skill of a worker in the art at the time of the invention to determine suitable and optimum concentrations for Igarashi's iridium compounds in the luminescence layer of the device. One of ordinary skill in the art would have reasonably expected that functional devices could be provided using the various iridium compounds disclosed and suggested by Igarashi at

concentrations greater than 8 wt% since Igarashi discloses functional devices having greater than 8 wt% of an iridium compound in the luminescence layer.

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 17-19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 12-16 of copending Application No. 10/090,836. Although the conflicting claims are not identical, they are not patentably distinct from each other. The compounds of present formulae (39), (40) and (41) are compounds within the scope of compounds of formula (6) as defined in copending claim 12 wherein X denotes CRR'. A device/apparatus as claimed in present claims 17-19 in which the second organic compound is a compound of formula (39), (40) or (41) meets the limitations of a device/apparatus as claimed in copending claims 13-16 in which X denotes CRR' in the compound of formula (6).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Applicant's arguments filed September 24, 2004 have been fully considered but they are not persuasive with respect to the patentability of the present claims over Igarashi. It is the examiner's position that some of compounds (1)-(49) are suggested by Igarashi, and the claimed device and display apparatus comprising one of the compounds suggested by Igarashi would have been obvious to one of ordinary skill in the art at the time of the invention.

10. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for Art Unit 1774 is (703) 872-9306 for all official faxes. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
November 05, 2004

Marie R. Yamnitzky

MARIE YAMNITZKY
PRIMARY EXAMINER

1774